# 2001 Advanced Technologies and Instrumentation (ATI): Special Competition: Astronomical Applications with the Advanced Electro-Optical System (AEOS) of the United States Air Force

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***Program Solicitation***

***NSF 01-66***

DIVISION OF ASTRONOMICAL SCIENCES

**FULL PROPOSAL DEADLINE(S): May 7, 2001**

**NATIONAL SCIENCE FOUNDATION**


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# SUMMARY OF PROGRAM REQUIREMENTS

## GENERAL INFORMATION

**Program Title:** 2001 Advanced Technologies and Instrumentation (ATI): Special Competition: Astronomical Applications with the Advanced Electro-Optical System (AEOS) of the United States Air Force

**Synopsis of Program:** This special competition is to enable access by the U.S. community to the 3.67-meter Advanced Electro-Optical System (AEOS) telescope with its sophisticated adaptive optics system for astronomical research and instrument development. This telescope system will be made available for 50 observing nights during calendar years 2001 and 2002.

This special competition makes available to the U.S. astronomical and instrument development community a 3.67-meter telescope with state-of-the-art passive adaptive optics for imaging through atmospheric turbulence. Seven fixed Coude rooms are available for astronomical observations with user-provided instrumentation. Alternatively, scientific observations can be made using the cameras and instruments provided on-site by the Air Force.

**Cognizant Program Officer(s):**

- James Breckinridge, Program Director, Division of Astronomical Sciences, Room 1045, telephone: (703) 292-4892, e-mail: jbreckin@nsf.gov.

**Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):**

- 47.049 --- Mathematical and Physical Sciences

## ELIGIBILITY INFORMATION

- **Organization Limit:** U.S. institutions that are eligible for awards from the National Science Foundation, including colleges, universities, and other nonprofit research institutions may submit proposals. NSF encourages collaborations with scientists at foreign institutions.
- **PI Eligibility Limit:** None
- **Limit on Number of Proposals:** None

## AWARD INFORMATION

- **Anticipated Type of Award:** Standard Grant
- **Estimated Number of Awards:** 4 To 6
- **Anticipated Funding Amount:** Approximately $0.8 million is anticipated to be

available for this competition in FY 2001.

## PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

### *A. Proposal Preparation Instructions*

- **Full Proposals:** Supplemental Preparation Guidelines
    - The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

### *B. Budgetary Information*

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** None
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full program announcement/solicitation for further information.

### *C. Deadline/Target Dates*

- **Letters of Intent (*optional*):** None
- **Preliminary Proposals (*optional*):** None
- **Full Proposal Deadline Date(s):** May 7, 2001

### *D. FastLane Requirements*

- **FastLane Submission:** Full Proposal Required
- **FastLane Contact(s):**
    - Kim Elliott, AST Division FastLane Expert, Division of Astronomical Sciences, 1053, telephone: (703) 292-4894, e-mail: kelliott@nsf.gov.

## PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board approved criteria apply.

## AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Additional award conditions apply. Please see the program announcement/solicitation for further information.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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# I. INTRODUCTION

Telescopes developed for the Air Force mission have application for astronomical research and instrument development. The Astronomy Division of the National Science Foundation and the Air Force Office of Scientific Research announce a collaborative research initiative to apply the AEOS 3.67 meter telescope on Haleakala, Maui, Hawaii to astronomical research and astronomical instrument development.

The goal is to provide access for the entire U.S. Astronomical community to advanced science instrumentation and to an adaptive optics imaging telescope for peer-reviewed science projects. The U.S. Astronomical community includes scientists at universities and non-profit organizations as well as scientists at Government mission agencies such as DOD, Air Force, Navy, Department of Energy and others.

The Air Force will support telescope operations for this research activity for 50 six hour nights per calendar year.

All proposals submitted to this joint NSF/AF program will be evaluated using the standard NSF peer-review process. Awards will be based on scientific merit. Telescope time and support to complete the scientific research process will be included.

# II. PROGRAM DESCRIPTION

The AEOS 3.67-meter telescope facility is a unique resource for the U.S. astronomical community. It is located on the top of 10,000 foot Mount Haleakala on the island of Maui in the state of Hawaii. At the latitude of Maui, much of the southern hemisphere is available to astronomers in addition to the more familiar northern hemisphere of stars. The altitude enables very good seeing in a dry cold environment, ideal for infrared astronomy.

The mountain-top facility has 40,000 square feet of laboratory space for seven Coude rooms fed by a vertical beam from the observing floor above. The entire sky is covered by an altitude-over-azimuth telescope mount.

The telescope truss structure is actively thermally controlled and there is a continuous thermal purge for the primary mirror wavefront sensor and the mirror face. There is a tertiary beam to feed the Nasmyth ports. The fields of view are 1000 microradians for the Nasmyth ports and 300 microradians for the Coude rooms. The two interchangeable secondaries change out in less than two hours. Switching time between Coude ports or between the Nasmyth ports is less than 3 minutes. The Adaptive Optics System is not available at the Nasmyth ports. It is available only at Coude.

The program will utilize instruments at the Nasmyth focus and at the Coude focus. The program will accept proposals to use either the set of instruments provided by the Air Force or guest investigator instruments provided by the Principal Investigator (PI). In all cases, it is a requirement that the need for the unique capabilities provided by the AEOS be clearly stated and documented.

The program is jointly managed by NSF and AFOSR. The peer-review selection process to identify the highest quality scientific proposals will be the process used by NSF. Successful proposals from mission agencies will receive telescope operations support from the Air Force. All other costs for the successful proposal such as travel, per diem and salary will be paid for by the mission agency.

## III. ELIGIBILITY INFORMATION

Limitations on the categories of organizations that are eligible to submit proposals:

U.S. institutions that are eligible for awards from the National Science Foundation, including colleges, universities, and other nonprofit research institutions may submit proposals. The NSF encourages collaborations with scientists at foreign institutions; however, primary support for any foreign participants/activities must be secured through their own sources.

Scientists from the mission agencies such as DoD, Air Force, Army, DoE, should submit 15 copies of their proposal (in the required NSF format, including the appropriate institutional approvals) directly to: Dr. Paul Bellaire; Air Force Office of Scientific Research; 801 North Randolph Street, Arlington, VA 22203-1977; telephone: (703 696-8411); e-mail: paul.bellaire@afosr.af.mil. These proposals will not be submitted to NSF.

Limitation on eligible topics:

To be considered in this competition, proposals must make use of the unique capabilities of the 3.67 meter telescope and its instrumentation for Astronomy. Eligible topics include instrument development and instrument test beds that will utilize the AEOS adaptive optics system or have user-supplied adaptive optics systems. Astronomical observations (and their interpretation) that make use of the existing AEOS adaptive optics instrumentation are also eligible.

There is no limitation on the number of proposals that may be submitted by an organization.

## IV. AWARD INFORMATION

Under this solicitation, proposals may be submitted for any funding amount up to $150K per year for up to two years. Grants may be awarded in a wide variety of sizes and durations. NSF expects to fund approximately 4 to 6 standard two year research awards depending on the quality of submissions. Pending the availability of funds approximately $0.8 million will be available for this initiative in FY 2001. Anticipated date of awards: August 2001.

# V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

## A. Proposal Preparation Instructions

**Full Proposal:**

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: http://www.nsf.gov/cgi-bin/getpub?nsf012. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

New Awardee Information

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF Grant Policy Manual which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 99-78) includes information on: Administrative and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with NSF Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site at: http://www.nsf.gov/cgi-bin/getpub?nsf9978.

All proposals to the AST Division must be submitted electronically using FastLane. Requirements for Fastlane in the Directorate of Mathematics & Physical Sciences can be found in the MPS FastLane Implementation ("http://www.nsf.gov/cgi-bin/getpub?nsf99104"NSF 99-104). Proposals from Scientists at the mission agencies must be submitted in FastLane format to Dr. Paul Bellaire, AFOSR, 801 North Randolph Street, Arlington, VA 22203-1977.

Additional information:

Additional information about the 3.67-meter telescope and the available instrumentation is available at: (http://ulua.mhpcc.af.mil/) and its links.

The project description should contain a research plan, management plan, and a schedule.

Research Plan (maximum length 10 pages):

The research plan must begin with a section that presents the conceptual, mathematical or computational model that outlines the research activities and describes how the proposed work can lead to achieving a predictive level of understanding of the system under study.

The remainder of the Research Plan should describe the strategies, protocols, and timetables to be used in research procedures in sufficient detail to allow informed judgement by expert reviewers. The plan should indicate how the experiments/activities are designed to achieve the desired level of accuracy as well as a definitive elaboration of the methods of estimation, the

inferential procedures to be used, and estimates of uncertainty for quantitative models and all research results.

Include information on the means by which data will be made available to the research community and to other users. In particular, specific arrangements made with other parties for the further exploration of selected types of discoveries should be spelled out. Proposals should take advantage of available opportunities for meaningful integration of research with education and outreach activities, and present these as an integral part of the research plan.

The Research Plan must include a research timetable and a clear statement of project goals and priorities.

Management Plan (maximum length 1 page):

The management plan should identify a single institution and individual at that institution as the lead institution, if the proposal involves multiple institutions. It should detail the duties and responsibilities of participants, i.e., who will be doing what, including identification of a research team leader (usually the lead PI) and the activities of associated partners. A discussion of how data, ideas and people will be networked to facilitate the management, integration and dissemination of information and the generation of new knowledge is essential.

Project Description should:

* Clearly identify, and justify, within a scientific framework, the importance of making the measurement.

* Demonstrate the need for the unique capabilities of the 3.67-meter aperture telescope to accomplish the science objectives.

* Demonstrate the need for use of a large Coude room for instrument development and/or need for the adaptive optics capabilities, or the need for the unique Air Force instruments..

* Demonstrate that the investigators understand the operations (with minimum technical support) of complex electro-optical hardware/software and laboratory instruments at mountain-top observatories.

The Project Description should also request:

1. The number of required observing nights and the desired dates & times; and

2. Total number of days required for access to a Coude room or instrument staging/calibration area, including estimates of needed utilities and equipment, such as overhead cranes.

Budgetary Limitations:

Budgets on NSF Form 1030, may include salary, travel, and institutional-overhead for the principal investigator and assistants, such as post-docs and graduate students, in support of observations, data reduction, interpretation, and scientific paper preparation.

Capital expenditures for equipment and apparatus must be called out separately in Section D and identified in the Budget Justification.

The duration of the proposed project must be justified. Proposals may request support for a maximum of 24 months. This information should be placed in the Supplementary Docs Section.

Schedule

Observations must be scheduled for calendar year 2001 and 2002. This information should be placed in the Supplementary Docs Section.

Biographical Sketches

Brief biographical information is required for the PI and Co-PI (s) only, and should list no more than 10 significant publications or other research products.

Cover Sheet (NSF Form 1207)

After selecting the appropriate program, begin the project title with: NSF/AFOSR Astronomy:

Technical Point of Contact:

Technical questions about the telescope and the instruments available and the adaptive optics system should be directed to:

Paul Kervin, Chief Scientist, Air Force Maui Optical Site, telephone:
(808) 874-1537, e-mail:kervin@eagle.mhpcc.af.mil

Proposers are reminded to identify the program solicitation number (NSF 01-66 ) in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

**B. Budgetary Information**

Cost sharing is not required in proposals submitted under this Program Solicitation.

***Indirect Cost (F&A) Limitations:*** None

***Other Budgetary Limitations:*** The estimated range for awards is $150K per year for two years. See Paragraph A of Section V - Proposal Preparation and Submission Instructions, for additional Budgetary Limitations

**C. Deadline/Target Dates**

Proposals must be submitted by the following date(s):

**Full Proposals *by 5:00 PM local time*:** May 7, 2001

**D. FastLane Requirements**

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: http://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call 1-800-673-6188.

*Submission of Signed Cover Sheets.* The signed copy of the proposal Cover Sheet (NSF Form 1207) must be postmarked (or contain a legible proof of mailing date assigned by the carrier) within five working days following proposal submission and be forwarded to the following address:

National Science Foundation
DIS – FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

# VI. PROPOSAL REVIEW INFORMATION

### A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgements.

**What is the intellectual merit of the proposed activity?**
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

**What are the broader impacts of the proposed activity?**
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements careful consideration in making funding decisions.

***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

**B. Review Protocol and Associated Customer Service Standard**

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement.

Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at its own risk.

# VII. AWARD ADMINISTRATION INFORMATION

## A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

## B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site at http://www.nsf.gov/cgi-bin/getpub?gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Web site at http://www.gpo.gov.

**Special Award Conditions**
Acknowledgement:

In addition, the following acknowledgement on publications resulting from the proposed research is recommended:

"The US Air Force provided the telescope time, on-site support and 80% of the research funds for this AFOSR and NSF jointly sponsored research under grant number NSF AST _____."

**C. Reporting Requirements**

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

## VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding 2001 Advanced Technologies and Instrumentation (ATI): Special Competition: Astronomical Applications with the Advanced Electro-Optical System (AEOS) of the United States Air Force should be made to:

- James Breckinridge, Program Director, Division of Astronomical Sciences, Room 1045, telephone: (703) 292-4892, e-mail: jbreckin@nsf.gov.

For questions related to the use of FastLane, contact:

- Kim Elliott, AST Division FastLane Expert, Division of Astronomical Sciences, 1053, telephone: (703) 292-4894, e-mail: kelliott@nsf.gov.

## IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF web site at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

# PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

*OMB control number:* 3145-0058.